



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs
Registration Division (7505P)
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

EPA Reg. Number:

228-740

Date of Issuance:

3/22/18

NOTICE OF PESTICIDE:

Registration
 Reregistration
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

Engulf Miticide/Insecticide

Name and Address of Registrant (include ZIP Code):

Nufarm Americas, Inc.
4020 Aerial Center Parkway
Morrisville, NC 27560

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. The data requirements for storage stability and corrosion characteristics (Guidelines 830.6317 and 830.6320) are not satisfied. A one year study is required to satisfy these data requirements. You have 18 months from the date of registration to provide these data.

Signature of Approving Official:

Venus Eagle, Product Manager 01
Invertebrate-Vertebrate Branch 3, Registration Division (7505P)
Office of Pesticide Programs

Date:

3/22/18

3. Make the following label changes before you release the product for shipment:
 - Revise the EPA Registration Number to read, “EPA Reg. No. 228-740.”
4. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 07/05/2017

If you have any questions, please contact Jacquelyn Herrick by phone at 703-347-0559, or via email at herrick.jacquelyn@epa.gov.

Enclosure

Sublabel A: Agricultural Use Only

[Note to reviewer: [Text] in brackets denotes optional text].

BIFENAZATE	GROUP	20D	ACARICIDE
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ENGULF™

MITICIDE/INSECTICIDE

ACTIVE INGREDIENT:

bifenazate: hydrazine carboxylic acid, 2-(4-methoxy-[1,1'-biphenyl]-3-yl) 1-methylethyl ester..... 43.2%

OTHER INGREDIENTS:..... 56.8%

TOTAL:..... 100.0%

Contains 4 pounds active ingredient bifenazate per gallon

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS
AND DIRECTIONS FOR USE

FIRST AID

IF SWALLOWED:

- Call poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything to an unconscious person.

IF INHALED:

- Move the person to fresh air.
- If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300
For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 228-xxx
EPA EST. NO. _____

Manufactured for:
NUFARM AMERICAS INC.
11901 S. Austin Avenue
Alsip, IL 60803



NET CONTENTS:

[Designation as "NONREFILLABLE" or "REFILLABLE" for containers > 5 GAL]
[Nufarm: Grow a better tomorrow]
[Grow a better tomorrow]

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ACCEPTED

03/22/2018

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No. 228-740

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Harmful if inhaled. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and Other Handlers Must Wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks, and
- For mixing and loading activities when not using a closed system, wear an apron and chemical-resistant gloves made of: barrier laminate, polyethylene, butyl rubber (≥ 14 mils), nitrile rubber (≥ 14 mils), neoprene rubber (≥ 14 mils), natural rubber (≥ 14 mils), polyvinyl chloride (≥ 14 mils), or Viton (≥ 14 mils).

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then, wash thoroughly and change into clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing them. As soon as possible, wash thoroughly and change clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds, estuarine/marine invertebrates and fish. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsate. This product is moderately toxic to bees and other pollinating insects exposed to direct treatment or to residues in/on blooming crops or weeds. Protect pollinating insects by following label directions intended to minimize drift and to reduce pesticide risk to these organisms. Do not apply this product while bees are foraging the treatment area.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame. Do not mix or allow to come into contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS), 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the **restricted entry interval (REI) of 12 hours**. Exceptions are listed under the USE INSTRUCTIONS for each crop.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- coveralls
- shoes plus socks
- chemical-resistant gloves made of: barrier laminate, polyethylene, butyl rubber (≥14 mils), nitrile rubber (≥14 mils), neoprene rubber (≥14 mils), natural rubber (≥14 mils), polyvinyl chloride (≥14 mils), or Viton (≥14 mils).

USE INFORMATION

ENGULF™ provides both knockdown action as well as extended residual control of the following mites when applied directly to foliage as directed by this label:

Avocado red spider	Clover	Pecan leaf scorch	Spruce spider mite
Banks grass	European red*	Persea	Strawberry spider
Brown almond	McDaniel	Sixspotted	Two-spotted spider
Citrus red	Pacific spider	Southern red mite	Willamette

* using maximum rate specified for the crop or crop group.

ENGULF is appropriate for use in IPM and resistance management programs. Because ENGULF is *not* systemic, effective control requires complete coverage of both upper and lower leaf surfaces.

MIXING INSTRUCTIONS

ENGULF is a flowable suspension concentrate, **users must be sure to stir or shake this product well prior to use.**

- 1) Fill spray tank with 1/2 the specified amount of water.
- 2) Begin agitation and add the required amount of ENGULF.
- 3) Fill the tank with the remaining amount of required water and continue agitation until the product is fully dispersed.

NOTE: The stability of ENGULF can be affected by high pH and high temperature. Keep spray mixtures containing ENGULF within pH 5.5 - 6.5.

Tank Mixes: To increase the number of insect and/or mite species controlled, ENGULF may be tank-mixed with other insecticides. *It is required that compatibility with other tank-mix partners be confirmed prior to broad-scale applications.* Tank mixtures are only permitted in States where all of the pesticide products used as tank-mix partners are registered. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Use Restrictions

- Do NOT plant another crop within 30 days after last application of ENGULF™. Planting within 30 days of last application increases the likelihood of bifentazate residues appearing in rotational crops.
- Do NOT exceed the maximum amount of bifentazate allowed per crop per calendar year. This applies to *all* product(s) containing bifentazate that are applied to the crop in a calendar year.
- When applying to Golden Delicious apples, do NOT tank-mix oil with ENGULF.
- Do NOT use adjuvants in tank mixtures that will be applied to greenhouse tomatoes.
- Do NOT apply to greenhouse tomatoes within 3 days of harvest (3-day PHI).
- Human flagging is prohibited. Flagging to support aerial application is limited to use of the Global Positioning System (GPS) or mechanical flaggers.

USE RATES AND DIRECTIONS

ENGULF controls the mite species listed above and is effective against grass, red and spider mites, primarily in the motile stage of development but does provide ovicidal control of spider mites (*Tetranychus* spp.) as well. Note that ENGULF does NOT control broad, flat or rust mites. If mite pressure is not heavy, use the lowest specified rates listed. If mite pressure is significant or to provide extended residual control, use the highest specified rates listed. In order to maximize residual control, apply the product as soon as mites are detected. For specific application rates, application numbers, and Pre-Harvest Intervals (PHI), refer to the appropriate USE INSTRUCTIONS tables below.

For ground applications apply ENGULF using the following types of equipment: air-blast sprayers, compressed air, or hydraulic ground booms. The USE INSTRUCTIONS tables below indicate the minimum numbers of gallons of spray solution to apply per acre for ground applications.

For aerial applications apply ENGULF on certain crops using either a fixed-wing aircraft or a helicopter. A minimum spray volume that ensures complete canopy coverage must be used. Refer to the USE INSTRUCTIONS tables for the minimum numbers of gallons of spray solution to apply per acre (or apply the minimum gallons/acre allowed by your State, which may not be less than the minimum gallons/acre shown on this label).

For Chemigation Applications (Cranberry, Mint, Potato, and Timothy, only): Only one chemigation application may be made per calendar year, and the system must be operated at 80% to 100% during the application to apply the minimum amount of water possible. Refer to the USE INSTRUCTIONS - BEARING CROPS tables for the ranges in application rates permitted and to the CHEMIGATION USE PRECAUTIONS AND INSTRUCTIONS FOR CRANBERRY, MINT, POTATO, AND TIMOTHY.

SPRAY DRIFT

Aerial Applications:

- Do not release spray at a height greater than 10 feet above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a coarse or coarser droplet size (ASABE S572.1).
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use 1/2 swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented to the spray is directed toward the back of the aircraft.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

Ground Boom Applications:

- Apply with the nozzle height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use fine or coarser droplet size (ASABE S572.1).

- | |
|---|
| <ul style="list-style-type: none">• Do not apply when wind speeds exceed 10 miles per hour at the application site.• Do not apply during temperature inversions. |
|---|

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles – Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop canopy, unless a greater application height is necessary for pilot safety.

RELEASE HEIGHT – Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, do not release spray at a height greater than 10 ft. above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

USE INSTRUCTIONS - BEARING CROPS [(crops that will bear fruit within one year of application)]

If mite pressure is not heavy, use the lowest specified rates listed. If mite pressure is significant or to provide extended residual control, use the highest specified rates listed.

AVOCADO

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	-	-	2	21*	7

* Use a miticide with a different mode of action between 2 applications of ENGULF™.

CANEBERRY SUBGROUP 13-07A: Blackberry; loganberry; red and black raspberry and cultivars and/or hybrids of these; Wild Raspberry

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	-	-	2	30*	1

* Use a miticide with a different mode of action between 2 applications of ENGULF.

CHRISTMAS TREES / CONIFER PLANTATIONS AND NURSERIES

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	100	10*	-	1	-	-

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

COTTON

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
16 – 24	20	5*	-	1	-	60

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

CUCURBIT VEGETABLES: Cucumbers; Edible Gourds¹; Muskmelon²; Pumpkin; Squash (summer³ and winter⁴), Watermelon; Chayote (fruit) (*Sechium edule*), Chinese waxgourd (Chinese preserving melon) (*Benincasa hispida*), Citrus melon (*Citrullus lanatus* var. *citroides*), Gherkin (*Cucumis anguria*), *Momordica* spp. (includes balsam apple balsam pear, bitter melon, Chinese cucumber)

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	10*	-	1	-	3

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

¹ Edible Gourd (*Lagenaria* spp.) (includes *hyotan* and *cucuzza*), and (*Luffa acutangula* and *L. cylindrical*) which includes hechima and Chinese okra.

² Muskmelon (hybrids and/or cultivars of *Cucumis melo*) includes true cantaloupe, casaba, crenshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon.

³ Squash, summer (*Cucurbita pepo* var. *melo*) includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini.

⁴ Squash, winter (*Cucurbita maxima*: *C. moschata*) includes butternut squash, calabaza, hubbard squash; (*C. mixta*; *C. pepo*) includes acorn squash, spaghetti squash.

DRIED SHELLLED BEAN (EXCEPT SOYBEAN) SUBGROUP: Cultivars of *Lupinus* spp. include grain lupin, sweet lupin, white lupin, and white sweet lupin; *Phaseolus* spp. include field bean, kidney bean, lima beans (dry), navy bean, and pinto bean; tepary bean; *Vigna* spp., including adzuki bean, blackeyed pea, catjang, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, and urd bean; broad bean (dry); chickpea; guar; lablab bean; and lentil.

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
16 – 24	20	7 *	-	2	14 **	7

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

** Use a miticide with a different mode of action between 2 applications of ENGULF™.

FRUITING VEGETABLES, GROUP 8-10: Eggplant; Okra; Peppers (including all varieties of *Capsicum* spp.¹); **Tomatoes** (field grown); **African eggplant; bush tomato; bell pepper; cocona; currant tomato; garden huckleberry; goji berry; ground cherry (*Physalis* spp.); martynia; naranjilla; pea eggplant; pepino; pepper** (includes, nonbell pepper, chili pepper, hot cooking pepper, pimento, sweet pepper), **roselle; scarlet eggplant; sunberry; tomatillo; tree tomato;** cultivars, varieties and/or hybrids of these.

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	10 *	-	1	-	3

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

¹ Pepper (*Capsicum* spp.) includes bell peppers, chili peppers, cooking peppers, pimento, and sweet peppers.

Grape¹; Amur River Grape; Gooseberry; Kiwifruit, hardy; Maypop; Schisandra Berry; Cultivars, varieties and/or hybrids of these.

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	-	-	1	-	14

¹ Grapes: The REI is 5 days for cane turning, tying and girdling of table grapes. Exception: In addition to the early entry exceptions allowed by WPS, you may enter or allow workers to enter treated areas to perform all tasks other than tying, turning and girdling after 12 hours following applications, as long as at least long pants, long-sleeved shirts shoes and socks are worn. Notify workers of the exception (including when entry is permitted for each of the tasks named in the exception).

HOPS

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 24	50	-	-	1	-	14

LEGUME VEGETABLES SUBGROUP 6A (succulent) SUCCULENT PEAS and BEANS SUBGROUP 6B; SUCCULENT SHELLED SOYBEAN: Bean (*Lupinus* spp.) (includes grain lupin, sweet lupin, white lupin, and white sweet lupin); **bean (*Phaseolus* spp.)** (includes field bean, kidney bean, lima beans, navy bean, pinto bean, runner bean, snap bean, tepary bean, wax bean); **bean (*Vigna* spp.)** (includes adzuki bean, asparagus bean, blackeyed pea, catjang, Chinese longbean, cowpea, Crowder pea, moth bean, mung bean, rice bean, southern pea, urd bean, yardlong bean); **broadbean (fava); chickpea (garbanzo); guar; jackbean; lablab bean; lentil; pea (*Pisum* spp.)** (includes dwarf pea, edible-pod pea, English pea, field pea, garden pea, green pea, snow pea, sugar snap pea); **pigeon pea; soybean (immature seed); sword bean; sugar pea; Chinese pea; pois mange tout; snap pea; ming pea; podded pea; snow pea; China pea; chicharo; shi hia wandou; saya-endo; sugar snap pea; Congo pea; no-eye pea; red gram; arher; gandule; dhal; toor; gunds pea; Porto Rico pea; urher gandul; guandu; pois-d'angole; gungo pea.**

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
16 – 24	20	10 *	-	2	14 **	3

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

** Use a miticide with a different mode of action between 2 applications of ENGULF™.

MINT

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 24	50	10 *	0.1 – 0.2 **	1	-	7

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

** Refer to USE RATES AND DIRECTIONS and CHEMIGATION USE PRECAUTIONS AND INSTRUCTIONS sections.

POME FRUIT, GROUP 11-10: Apples; Crabapples; Pears; Quince; azarole; medlar; pear, Asian; quince, Chinese; quince, Japanese; tejocote; cultivars, varieties and/or hybrids of these.

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	-	-	1	-	7

POTATOES Tuberous and corm vegetables: arracacha; arrowroot; artichoke, Chinese; artichoke, Jerusalem; canna, edible; cassava, bitter and sweet; chayote (root); chufa; dasheen (taro); ginger; leren; potato; sweet potato; tanier; turmeric; yam bean; yam, true.

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
16 – 24	20	10 *	0.1 – 0.2 **	2	14 ***	14

* Minimum gallons per acre OR the minimum permitted by your state, *but not less than shown*.

** Refer to USE RATES AND DIRECTIONS and CHEMIGATION USE PRECAUTIONS AND INSTRUCTIONS sections.

*** Use a miticide with a different mode of action between 2 applications of ENGULF.

Strawberry; Bearberry; Bilberry; Blueberry, lowbush; Cloudberry; Cranberry; Lingonberry; Muntries; Partridgeberry; Cultivars, varieties, and/or hybrids of these.

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	100	-	0.1 – 0.2 * (Cranberry ONLY)	2	21 **	1

* Refer to USE RATES AND DIRECTIONS and CHEMIGATION USE PRECAUTIONS AND INSTRUCTIONS sections.

** Use a miticide with a different mode of action between 2 applications of ENGULF.

STONE FRUIT: Apricots; Cherries (sweet & tart); **Nectarines; Peaches; Plums/Prunes** (*Prunus domestica*, *Prunus* spp.), **Chickasaw Plum** (*Prunus augustifolia*), **Damson Plum** (*Prunus domestica* spp. *insititia*), **Japanese Plum** (*Prunus salicina*), and **Plumcot** (*Prunus armeniaca* X *P. domestica*)

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	-	-	1	-	3

TIMOTHY forage and hay fed to horses ONLY.

(Applications are only permitted in Eureka and Humboldt Counties in Nevada)

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
16 – 24	20	10	0.1 – 0.2 *	1	-	Forage: 0 Hay: 7

* Refer to USE RATES AND DIRECTIONS and CHEMIGATION USE PRECAUTIONS AND INSTRUCTIONS sections.

TOMATOES: Grown in Greenhouses ONLY

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
2-4	100*	-	-	2	-	3

*Apply 1-4 quarts of mixture per 100 square feet (100-400 gallons per acre) to the foliage using ground spray equipment (including air blast, compressed air, ground boom, hose-end and hydraulic sprayers). The spray volume used is dependent on the size of the plants being treated, with larger plants requiring greater spray volumes.

TREE NUTS: Almonds

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 24	50	-	-	1	-	7

TREE NUTS: Beech nut; Brazil nut; Butternut; Cashew; Chestnut; Chinquapin; Filbert (Hazelnut); Hickory nut; Macadamia nut (bush nut); Pecans; Pistachios; Walnuts (black & English)

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 24	50	-	-	1	-	14

TROPICAL FRUIT: Papaya; Star Apple; Black Sapote; Mango; Sapodilla; Canistel; Mamey Sapote; Lychee; Longan; Spanish Lime; Rambutan; Pulasan; Guava; Feijoa; Jaboticaba; Wax Jambu; Starfruit (Carambola); Passionfruit; Acerola; Sugar Apple; Cherimoya; Atemoya; Custard Apple; Illama; Soursap; Biriba

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre		Inches of Water for Chemigation per Acre	Maximum Number of Applications per Calendar Year	Minimum Number of Days Between Applications	Pre-Harvest Interval (PHI) in Days
	Ground	Air				
12 – 16	50	-	-	2	21 *	1

* Use a miticide with a different mode of action between 2 applications of ENGULF™.

USE INSTRUCTIONS - NON-BEARING CROPS

ENGULF™ may be used on non-bearing crops (defined as crops that will not bear fruit within one year of application), including all crops listed for the USE INSTRUCTIONS - BEARING CROPS tables as well as the Additional Crops listed below. This use includes application to non-bearing fruit trees and berries in commercial nurseries and tree plantations.

Non-bearing crop applications may be used to control the following mites:

Banks grass	European red*	Southern red mite	Willamette
Brown almond	McDaniel	Spruce spider mite	
Citrus red	Pacific spider	Strawberry spider	
Clover	Pecan leaf scorch	Two-spotted spider	

* using the maximum rate specified for the crop or crop group.

USE RESTRICTIONS FOR NON-BEARING CROPS

- Use ground application equipment ONLY.
- The non-bearing crops listed below have a 12-hour restricted entry interval (REI).

Additional Crops: **Berries** (blueberry, highbush; elderberry; huckleberry); **Citrus** (grapefruit, lemons, limes, oranges, tangerines, etc.); **Currants; Dates; Figs; Persimmons**

Application Rate (fl. oz. / Acre)	Minimum Gallons of Water per Acre	Maximum Number of Applications per Calendar Year
12 – 16	50	1

USE INSTRUCTIONS – ORNAMENTALS GROWN IN GREENHOUSES AND SHADEHOUSES

ENGULF may be applied to ornamental foliage for knockdown and residual control of mites on ornamental plants (including ornamental bulb crops, bedding plants, ornamental foliage and flowering plants, perennials, shrubs and trees). The plants may be grown in the ground or in pots.

ENGULF works most effectively on mites that are motile, but also has ovicidal activity against the *Tetranychus* spp. mites (i.e., Spider Mites) and is especially effective against grass mites, red mites and spider mites. Common mite species controlled by ENGULF include:

Bamboo Spider Mite <i>Schizotetranychus celarius</i> (Banks)	Pacific Mite <i>Tetranychus pacificus</i> (McGregor)
Citrus Red Mite <i>Panonychus citri</i> (McGregor)	Southern Red Mite <i>Oligonychus ilcis</i> (McGregor)
Clover Mite <i>Bryobia praetiosa</i> (Koch)	Spruce Spider Mite <i>Oligonychus ununguis</i> (Jacobi)
European Red Mite <i>Panonychus ulmi</i> (Koch)	Strawberry Mite <i>Tetranychus turkestanii</i>
Lewis Mite <i>Eotetranychus lewisi</i>	Two-Spotted Spider Mite <i>Tetranychus urticae</i> (Koch)

NOTE: ENGULF is not effective in controlling rust mites, broad mites and flat mites.

Because ENGULF is not a systemic insecticide, thorough coverage of both the upper and lower surfaces of the leaves, as well as any fruit present, is required. When used as directed, ENGULF is useful in resistance management and IPM programs due to its selective nature that minimizes impacts to beneficial insects.

Use Rates and Application Information

Apply as soon as mites appear. ENGULF provides residual control for up to 28 days. Within the range of rates specified in the next paragraph, use the lower listed rates when mite pressure is low or for preventative applications; and use the higher rates when mite pressure is severe or for residual control.

Mix 2-4 fluid ounces of ENGULF™ per 100 gallons of water (1/8 – 1/4 teaspoon per gallon of water). Apply 1-4 quarts of the mixture per 100 square feet (100-400 gallons per acre) to the foliage using ground spray equipment (including air blast, compressed air, ground boom, hose-end and hydraulic sprayers). The spray volume used is dependent on the size of the plants being treated, with larger plants requiring greater spray volumes.

Coverage of ornamentals with hard-to-wet foliage may be improved by using an adjuvant to the spray mixture. Silwet 77® or Sylgard 309® at a rate of 4 ounces per 100 gallons of water has been found to be effective. As with any tank mixture, test the compatibility and safety of any adjuvants in a small-scale trial prior to widespread use.

USE RESTRICTIONS:

- Do NOT apply ENGULF more than two times per calendar year.
- Do NOT apply more than 16 fluid ounces of ENGULF per acre per calendar year.
- Do NOT apply ENGULF by aerial application.

CHEMIGATION USE PRECAUTIONS AND INSTRUCTIONS

- Apply ENGULF only through sprinkler systems, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply ENGULF through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make the necessary adjustments should the need arise.
- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Maintain constant agitation in the supply tank for the duration of the application.
- To insure complete mixing of the spray solution, use a positive displacement pump to inject the solution before a right angle turn in the main line.
- Applying more than the specified amount of irrigation water per acre may result in decreased performance due to the chemical being flushed from leaf surfaces.

- Do NOT apply ENGULF™ if there are leaks in any of the fittings or connections, if nozzles do not provide uniform distribution, or if lines containing ENGULF will be drained and dismantled.
- Apply ENGULF for the entire duration of the irrigation process. Calibration accuracy and product distribution will be improved if a larger volume of a more dilute mixture is injected per hour.
- Poor control of mites may result if sprinkler application patterns do not sufficiently overlap. Excessive overlap may result in crop injury.
- Only one chemigation application may be made per calendar year, and the system must be operated at 80% to 100% during the application to apply the minimum amount of water possible.
- Contact State lead agencies for pesticide regulation for State-specific requirements pertaining to chemigation.

RESISTANCE MANAGEMENT

For resistance management, ENGULF contains a Group 20D acaricide. Any insect/mite population may contain individuals naturally resistant to ENGULF or other Group 20D acaricides. The resistant individuals may dominate the insect/mite population if this group of acaricides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed. To delay acaricide resistance, take the following steps:

- Rotate the use of ENGULF or other Group 20D acaricides within a growing season, or among growing seasons, with different groups that control the same pests. Avoid application of more than 24 fl. oz./A and consecutive sprays of ENGULF or other insecticides in the same group in a season.
- Use tank mixtures with insecticides/acaricides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
 - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
 - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
 - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
 - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
 - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticide activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.
- Because of its selectivity, ENGULF can be used in conjunction with most biological control organisms available for mite control. ENGULF, when used as directed, does not adversely affect populations of beneficial/predaceous mites and insects including:

Common lacewing (<i>Chrysopa carnea</i>)	Seven-spotted lady beetle (<i>Coccinella septempunctata</i>)
Insidious flower bug (<i>Orius insidiosus</i>)	Six-spotted thrips (<i>Scolothrips sexmaculatus</i>)
Predatory mite (<i>Amblyseius fallacis</i>)	Spider mite destroyer (<i>Stethorus punctum</i>)
Predatory mite (<i>Typhlodromus pyri</i>)	Western flower thrips (<i>Frankliniella occidentalis</i>)
Predatory mite (<i>Zetzellia mali</i>)	Western predatory mite (<i>Typhlodromus occidentalis</i>)
Predatory mite (<i>Phytoseiulus persimilis</i>)	

The use of these organisms in conjunction with ENGULF™ is encouraged as a means of reducing the number of chemical applications.

- Adopt an integrated pest management program for insecticide/acaracides use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which contains cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisors for any additional pest resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact Nufarm Americas, Inc. at 919-379-2510

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in a dry location.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

[For rigid, non-refillable containers (≤ 5 gallons):] Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake container for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by incineration.

[For rigid, non-refillable containers (> 5 gallons):] Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by incineration.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

LIMITATION OF LIABILITY

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, OR FOR DAMAGES IN THEIR NATURE OF PENALTIES RELATING TO THE GOODS SOLD, INCLUDING USE, APPLICATION, HANDLING, AND DISPOSAL. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, MANUFACTURER OR SELLER SHALL NOT BE LIABLE TO BUYER OR USER BY WAY OF INDEMNIFICATION TO BUYER OR TO CUSTOMERS OF BUYER, IF ANY, OR FOR ANY DAMAGES OR SUMS OF MONEY, CLAIMS OR DEMANDS WHATSOEVER, RESULTING FROM OR BY REASON OF, OR ARISING OUT OF THE MISUSE, OR FAILURE TO FOLLOW LABEL WARNINGS OR INSTRUCTIONS FOR USE, OF THE GOODS SOLD BY MANUFACTURER OR SELLER TO BUYER. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ALL SUCH RISKS SHALL BE ASSUMED BY THE BUYER, USER, OR ITS CUSTOMERS. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BUYER'S OR USER'S EXCLUSIVE REMEDY, AND MANUFACTURER'S OR SELLER'S TOTAL LIABILITY SHALL BE FOR DAMAGES NOT EXCEEDING THE COST OF THE PRODUCT.

If you do not agree with or do not accept any of directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

ENGULF and MINX are trademarks of Nufarm Americas, Inc.

[All other trademarks are the property of their respective owners]

[RVmmdyyy]

Sublabel B: Non-Agricultural Use Only

[Note to reviewer: [Text] in brackets denotes optional text].

BIFENAZATE	GROUP	20D	ACARICIDE
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ENGULF™

MITICIDE/INSECTICIDE

ACTIVE INGREDIENT:

bifenazate: hydrazine carboxylic acid, 2-(4-methoxy-[1,1'-biphenyl]-3-yl) 1-methylethyl ester..... 43.2%

OTHER INGREDIENTS:..... 56.8%

TOTAL:..... 100.0%

Contains 4 pounds active ingredient bifenazate per gallon

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE INSIDE BOOKLET FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND DIRECTIONS FOR USE

FIRST AID

IF SWALLOWED:

- Call poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything to an unconscious person.

IF INHALED:

- Move the person to fresh air.
- If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 228-xxx
EPA EST. NO. _____

Manufactured for:
NUFARM AMERICAS INC.
11901 S. Austin Avenue
Alsip, IL 60803



NET CONTENTS:

[Designation as “NONREFILLABLE” or “REFILLABLE” for containers > 5 GAL]

[Nufarm: Grow a better tomorrow]

[Grow a better tomorrow]

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PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed. Harmful if inhaled. Avoid breathing spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and Other Handlers Must Wear:

- Long-sleeved shirt and long pants,
- Shoes plus socks, and
- For mixing and loading activities when not using a closed system, wear an apron and chemical-resistant gloves made of: barrier laminate, polyethylene, butyl rubber (≥ 14 mils), nitrile rubber (≥ 14 mils), neoprene rubber (≥ 14 mils), natural rubber (≥ 14 mils), polyvinyl chloride (≥ 14 mils), or Viton (≥ 14 mils).

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then, wash thoroughly and change into clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing them. As soon as possible, wash thoroughly and change clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to birds, estuarine/marine invertebrates and fish. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsate. This product is moderately toxic to bees and other pollinating insects exposed to direct treatment or to residues in/on blooming crops or weeds. Protect pollinating insects by following label directions intended to minimize drift and to reduce pesticide risk to these organisms. Do not apply this product while bees are foraging the treatment area.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame. Do not mix or allow to come into contact with oxidizing agents. Hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product through any type of irrigation system.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries and greenhouses.

Keep unprotected persons out of treated areas until sprays have dried.

USE INFORMATION

ENGULF™ may be applied to ornamental foliage for knockdown and residual control of mites on ornamental plants (including annuals, bulbs, ornamental bedding plants, foliage and flowering plants, trees, perennials, [deciduous and evergreen trees] and shrubs), indicated backyard fruit and nut trees that will not bear fruit for at least 12 months. The plants may be grown in the ground or in pots.

ENGULF may only be applied to the above listed plants around residences, public, commercial and industrial areas; interior and exterior landscaping; recreational sites including golf courses, parks, athletic fields, and campgrounds; and rights-of-way and other easement uses.

ENGULF works most effectively on mites that are motile, but also has ovicidal activity against the *Tetranychus* spp. mites (i.e., Spider Mites) and is especially effective against grass mites, red mites and spider mites. Common mite species controlled by ENGULF include:

Bamboo Spider Mite *Schizotetranychus celarius* (Banks)

Citrus Red Mite *Panonychus citri* (McGregor)

Clover Mite *Bryobia praetiosa* (Koch)

European Red Mite *Panonychus ulmi* (Koch)

Lewis Mite *Eotetranychus lewisi*

Banks grass *Oligonychus pratensis*

Brown almond *Bryobia rubrioculus*

Six spotted *Eotetranychus sexmaculatus*

Pacific Mite *Tetranychus pacificus* (McGregor)

Southern Red Mite *Oligonychus ilcis* (McGregor)

Spruce Spider Mite *Oligonychus ununguis* (Jacobi)

Strawberry Mite *Tetranychus turkestanii*

Two-Spotted Spider Mite *Tetranychus urticae* (Koch)

McDaniel *Tetranychus mcdanieli* (McGregor)

Pecan leaf scorch *Eotetranychus hicoriae*

Willamette *Eotetranychus willamettei*

NOTE: ENGULF is not effective in controlling rust mites, broad, Cyclamen or flat mites.

Because ENGULF is not a systemic insecticide, thorough coverage of both the upper and lower surfaces of the leaves, as well as any fruit present, is required. When used as directed, ENGULF is useful in resistance management and IPM programs due to its selective nature that minimizes impacts to beneficial insects.

MIXING INSTRUCTIONS

To prepare ENGULF for application:

- 1) Fill the tank with 1/2 the required amount of water;
- 2) Add the specified amount of ENGULF;
- 3) Begin agitation to completely disperse the product; and,
- 4) Add the remaining water required for the tank mix and, if possible, maintain agitation while applying.

Because the stability of ENGULF can be negatively impacted in a high-temperature / high-pH situation, maintain the spray mixture between pH 5.5 – 6.5.

Tank-Mixtures with ENGULF

ENGULF may be tank-mixed with other insecticides if broad-spectrum control is necessary. When tank-mixing with other products, conduct a limited trial to determine the compatibility of the tank-mix partners prior to extensive use. Tank mixtures are only permitted in States where all of the pesticide products used as tank-mix partners are registered. It is the pesticide user's responsibility to ensure that all products are registered for the intended use.

Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

USE RATES AND APPLICATION INFORMATION

Apply as soon as mites appear. ENGULF™ provides residual control for up to 28 days. Within the range of rates specified in the next paragraph, use the lower rates when mite pressure is low or for preventative applications; and use the higher rates when mite pressure is severe or for extended residual control.

Mix 2-4 fluid ounces of ENGULF per 100 gallons of water (1/8 – 1/4 teaspoon per gallon of water). Apply 1-4 quarts of the mixture per 100 square feet (100-400 gallons per acre) to the foliage using ground spray equipment (including air blast, compressed air, ground boom, hose-end and hydraulic sprayers). The spray volume used is dependent on the size of the plants being treated, with larger plants requiring greater spray volumes.

Coverage of ornamentals with hard-to-wet foliage may be improved by using a wetting or spreading adjuvant to the spray mixture [such as Silwet 77® or Sylgard 309®]. Follow individual product instructions for adjuvant use. As with any tank mixture, the compatibility and safety of any adjuvants should be tested in a small-scale trial prior to widespread use.

USE RESTRICTIONS:

- Do NOT apply ENGULF more than two times per calendar year.
- Do NOT apply more than 16 fluid ounces of ENGULF per acre per calendar year.
- Do NOT apply ENGULF by aerial application.

SPRAY DRIFT

Ground Boom Applications:

- Apply with the nozzle height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use fine or coarser droplet size (ASABE S572.1).
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT.
BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

BOOM HEIGHT – Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop canopy and have minimal bounce.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. **AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.** Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

RESISTANCE MANAGEMENT

For resistance management, ENGULF™ contains a Group 20D acaricide. Any insect/mite population may contain individuals naturally resistant to ENGULF or other Group 20D acaricides. The resistant individuals may dominate the insect/mite population if this group of acaricides are used repeatedly in the same fields. Appropriate resistance-management strategies should be followed. To delay acaricide resistance, take the following steps:

- Rotate the use of ENGULF or other Group 20D acaricides within a growing season, or among growing seasons, with different groups that control the same pests. Avoid application of more than 24 fl. oz./A and consecutive sprays of ENGULF or other insecticides in the same group in a season.
- Use tank mixtures with insecticides/acaricides from a different group that are equally effective on the target pest when such use is permitted. Do not rely on the same mixture repeatedly for the same pest population. Consider any known cross-resistance issues (for the targeted pests) between the individual components of a mixture. In addition, consider the following recommendations provided by the Insecticide Resistance Action Committee (IRAC):
 - Individual insecticides selected for use in mixtures should be highly effective and be applied at the rates at which they are individually registered for use against the target species.
 - Mixtures with components having the same IRAC mode of action classification are not recommended for insect resistance management.
 - When using mixtures, consider any known cross-resistance issues between the individual components for the targeted pest(s).
 - Mixtures become less effective if resistance is already developing to one or both active ingredients, but they may still provide pest management benefits.
 - The insect resistance management benefits of an insecticide mixture are greatest if the two components have similar periods of residual insecticide activity. Mixtures of insecticides with unequal periods of residual insecticide activity may offer an insect resistance management benefit only for the period where both insecticides are active.

- Because of its selectivity, ENGULF™ can be used in conjunction with most biological control organisms available for mite control. ENGULF, when used as directed, does not adversely affect populations of beneficial/predaceous mites and insects including:

Common lacewing (<i>Chrysopa carnea</i>)	Seven-spotted lady beetle (<i>Coccinella septempunctata</i>)
Insidious flower bug (<i>Orius insidiosus</i>)	Six-spotted thrips (<i>Scolothrips sexmaculatus</i>)
Predatory mite (<i>Amblyseius fallacis</i>)	Spider mite destroyer (<i>Stethorus punctum</i>)
Predatory mite (<i>Typhlodromus pyri</i>)	Western flower thrips (<i>Frankliniella occidentalis</i>)
Predatory mite (<i>Zetzellia mali</i>)	Western predatory mite (<i>Typhlodromus occidentalis</i>)
Predatory mite (<i>Phytoseiulus persimilis</i>)	

The use of these organisms in conjunction with ENGULF is encouraged as a means of reducing the number of chemical applications.

- Adopt an integrated pest management program for insecticide/acaracides use that includes scouting, uses historical information related to pesticide use, crop rotation, record keeping, and which contains cultural, biological and other chemical control practices.
- Monitor after application for unexpected target pest survival. If the level of survival suggests the presence of resistance, consult with your local university specialist or certified pest control advisor.
- Contact your local extension specialist or certified crop advisors for any additional pest resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact Nufarm Americas, Inc. at 919-379-2510

PLANT TOLERANCE

It is not possible for the manufacturer or seller to determine safety for all varieties of ornamental plants, tank-mix combinations and/or sequential pesticide treatments. *It is required that the applicator determine safe use by testing the exact tank mix desired on the ornamental varieties present by conducting a small-scale test prior to widespread use. The end user assumes responsibility for any and all risks or damage caused by application of ENGULF™ in a manner inconsistent with its labeling.*

Backyard Fruit and Nut Trees

ENGULF may be used on listed fruit and nut trees found in residential [home /backyard] sites. Not for agricultural production.

- For bearing fruit and nut trees, use the following application rates. (For a list of insects controlled see the table in the Ornamental section).

Site	Application Rate fl. oz./1000 sq. ft. (lbs. ai/1000 sq. ft.)	Total number of sprays per calendar year	Minimum days between application
Avocado	0.275-0.367 fl. oz. (0.0086-0.0115 lbs. ai)	2 (maximum 0.0230 lbs. ai/1000 sq. ft.)	21
Pome Fruits (Apple, Crabapple, Loquat, Pear, Quince)		1 (maximum 0.0115 lbs. ai/1000 sq. ft.)	N/A
Stone Fruit (Apricot, Cherry, Nectarine, Peach, Plum, Prune)			
Tree Nuts (Almond, Cashew, Pecans, Pistachios, Walnut)	0.275-0.551 fl. oz. (0.0086-0.0172 lbs. ai)	1 (maximum 0.0172 lbs. ai/1000 sq. ft.)	
Tropical Fruit (Papaya, Mango, Guava)	0.275-0.367 fl. oz. (0.0086-0.0115 lbs. ai)	2 (maximum 0.0230 lbs. ai/1000 sq. ft.)	21

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE: Store in a dry location.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

[For rigid, non-refillable containers (≤ 5 gallons):] Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake container for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by incineration.

[For rigid, non-refillable containers (> 5 gallons):] Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by incineration.

WARRANTY DISCLAIMER

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